NCO1 29459
NCO1 30730
SAL1 34841
NOT1 34874
NCO1 39768

lambda.Gphi5.5
44022 bp

NCO1 19329
NCO1 19932
NOT1 20063
SAL1 20098

Left Arm

Right Arm

hTRT5'->

ECO47111 5860
FSP1 5875
FSP1 5953
FSP1 6372
ECO47111 7167
FSP1 7575
SAL1 7747

pGRN144.4
8015 bp

FSP1 1234
FSP1 1731

FSP1 3430
BGL2 3615
NCO1 3636

ORI       <-AmpR      CatS->        ALU       hTRT5'->        Intron2->
                     <-Flori       ALU       Intron1->

FIGURE 1

# FIGURE 2

SEQUENCE LISTING SEQ ID NO:1
ATTORNEY DOCKET NO. 015389-004000US
INFORMATION FOR SEQ ID NO:1:
   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 15418 base pairs
      (B) TYPE: nucleic acid
      (C) STRANDEDNESS: single
      (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: DNA (genomic)

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GCGGCCGCGA GCTCTAATAC GACTCACTAT AGGGCGTCGA CTC GATCAAT GGAAGATGAG      60

GCATTGCCGA AGAAAAGATT AATGGATTTG AACACACAGC AACAGAAACT ACATGAAGTG     120

AAACACAGGA AAAAAAAGAT AAAGAAAACGA AAGAAAAAGG GCATCAGTGA GCTTCAGCAG     180

AAGTTCCATC GGCCTTACAT ATGTGTAAGC AGAGGCCCTG TAGGAGCAGA GGCAGGGGGA     240

AAATACTTTA AGAAATAATG TCTAAAAGTT TTCAAATAT GAGGAAAAAC ATAAAACCAC      300

AGATCCAAGA AGCTCAACAA AACAAAGCAC AAGAAACAGG AAGAAATTAA AAGTTATATC     360

ACAGTCAAAT TGCTGAAAAC CAGCAACAAA GAGAATATCT TAAGAGTATC AGAGGAAAAG     420

AGATTAATGA CAGGCCAAGA AACAATGAAA ACAATACAGA TTTCTTGTAG GAAAACACAAG    480

ACAAAAGACA TTTTTAAAA CCAAAAGGAA AAAAAATGCT ACATTAAAAT GTTTTTTACC     540

CACTGAAAGT ATATTTCAAA ACATATTTTA GGCCAGGCTT GGTGGCTCAC ACCTGTAATC    600

CCAGCACTTT GGGAGGCCAA GGTGGGTGGA TCGCTTAAGG TCAGGAGTTC GAGACCAGCC    660

TGGCCAATAT AGCGAAACCC CATCTGTACT AAAAACACAA AAATTAGCTG GGTGTGGTGA    720

CACATGCCTG TAATCCCAGG TACTCAGGAG GCTAAGGCAG GAGAATTGCT TGAACTGGGA    780

GGCAGAGGTG GTGAGCCAAG ATTGCACCAG TGCACTCCAG CCTTGGTGAC AGAGTGAAAC    840
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TCCATCTCAA AAACAAACAA ACAAAATACA TATACATAAA TATATATGCA CATATATATA    900

CATATATAAA TATATATACA CATATATAAA TCTATATACA TATATACATA TATACACATA    960

TATAAATCTA TATACATATA TATACATATA TAATATATTT ACATATATAA ATATATACAT    1020

ATATAAATAT ACATATATAA ATACATATAT AAATATACAT ATATAAATAT ACATATATAA    1080

ATATACATAT ATAAATATAT ACATATATAA ATATACATAT ATAAATATAT ATACATATAT    1140

AAATATATAA ATATACAAGT ATATACAAAT ATATACATAT ATAAATGTAT ATACGTATAT    1200

ACATATATAT ATAAATATAT AAAAAAACTT TTGGCTGGGC ACCTTTCCAA ATCTCATGGC    1260

ACATATAAGT CTCATGGTAA CCTCAAATAA AAAAACATAT AACAGATACA CCAAAAATAA    1320

AAACCAATAA ATTAAATCAT GCCACCAGAA GAAATTACCT TCACTAAAAG GAACACAGGA    1380

AGGAAAGAAA GAAGGAAGAG AAGACCATGA AACAACCAGA AAACAAACAA CAAAACAGCA    1440

GGAGTAATTC CTGACTTATC AATAATAATG CTGGGTGTAA ATGGACTAAA CTCTCCAATC    1500

AAAAGACATA GAGTGGCTGA ATGGACGAAA AAAACAAGAC TCAATAATCT GTTGCCTACA    1560

AGAATATACT TCACCTATAA AGGGACACAT AGACTGAAAA TAAAAGGAAG GAAAAATATT    1620

CTATGCAAAT GGAAACCAAA AAAAGAAACA AACTAGCTAC ACTTATATCA GACAAAATAG    1680

ATTTCAAGAC AAAAAGTACA AAAAGAGACA AAGTAATTAT ATAATAATAA AGCAAAAAGA    1740

TATAACAATT GTGAATTTAT ATGCGCCCAA CACTGGGACA CCCAGATATA TACAGCAAAT    1800

ATTATTAGAA CTAAGGAGAG AGAGAGATCC CCATACAATA ATAGCTGGAG ACTTCACCCC    1860

GCTTTTAGCA TTGGACAGAT CATCCAGACA GAAAATCAAC CAAAAAATTG GACTTAATCT    1920

ATAATATAGA ACAAATGTAC CTAATTGATG TTTACAAGAC ATTTCATCCA GTAGTTGCAG    1980

2

AATATGCATT TTTCCTCAG CATATGGATC ATTCTCAAGG ATAGACCATA TATTAGGCCA    2040

CAGAACAAGC CATTAAAAAT TCAAAAAAT TGAGCCAGGC ATGATGGCTT ATGCTTGTAA    2100

TTACAGCACT TTGGGGAGGG TGAGGTGGGA GGATGTCTTG AGTACAGGAG TTTGAGACCA    2160

GCCTGGGCAA AATAGTGAGA CCCTGTCTCT ACAAACTTTT TTTTTAATT AGCCAGGCAT    2220

AGTGGTGTGT GCCTGTAGTC CCAGCTACTT AGGAGGCTGA AGTGGGAGGA TCACTTGAGC    2280

CCAAGAGTTC AAGGCTACGG TGAGCCATGA TTGCAACACC ACACCACCAGC CTTGGTGACA    2340

GAATGAGACC CTGTCTCAAA AAAAAAAAA AAAATTGAAA TAATATAAAG CATCTTCTCT    2400

GGCCACAGTG GAACAAAACC AGAAATCAAC AACAAGAGGA ATTTTGAAAA CTATACAAAC    2460

ACATGAAAAT TAAACAATAT ACTTCTGAAT AACCAGTGAG TCAATGAAGA AATTAAAAAG    2520

GAAATTGAAA AATTTATTTA AGCAAATGAT AACGGAAACA TAACCTCTCA AAACCCACGG    2580

TATACAGCAA AAGCAGTGCT AAGAAGGAAG TTTATAGCTA TAAGCAGCTA CATCAAAAAA    2640

GTAGAAAAGC CAGGGCGCAGT GGCTCATGCC TGTAATCCCA GCACTTTGGG AGGCCAAGGC    2700

GGGCAGATCG CCTGAGGTCA GGAGTTCGAG ACCAGCCTGA CCAACACAGA GAAACCTTGT    2760

CGCTACTAAA AATACAAAAT TAGCTGGGCA TGGTGGCACA TGCCTGTAAT CCCAGCTACT    2820

CGGGAGGCTG AGGCAGGATA ACCGCTTGAA CCCAGGAGGT GGAGGTTGCG GTGAGCCGGG    2880

ATTGCGCCAT TGGACTCCAG CCTGGGTAAC AAGAGTGAAA CCCTGTCTCA AGAAAAAAAA    2940

AAAAGTAGAA AAACTTAAAA ATACAACCTA ATGATGCACC TTAAAGAACT AGAAAAGCAA    3000

GAGCAAACTA AACCTAAAAT TGGTAAAAGA AAAGAAATAA TAAAGATCAG AGCAGAAATA    3060

AATGAAACTG AAAGATAACA ATACAAAAGA TCAACAAAAT TAAAAGTTGG TTTTTGAAA    3120

3

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AGATAAACAA AATTGACAAA CCTTTGCCCA GACTAAGAAA AAAGGAAAGA AGACCTAAAT   3180
AAATAAAGTC AGAGATGAAA AAAGAGACAT TACAACTGAT ACCACAGAAA TTCAAAGGAT   3240
CACTAGAGGC TACTATGAGC AACTGTACAC TAATAAATTG AAAAACCTAG AAAAAATAGA   3300
TAAATTCCTA GATGCATACA ACCTACCAAG ATTGAACCAT GAAGAAATCC AAAGCCCAAA   3360
CAGACCAATA ACAATAATGG GATTAAAGCC ATAATAAAAA GTCTCCTAGC AAAGAGAAGC   3420
CCAGGACCCA ATGGCTTCCC TGCTGGATTT TACCAATCAT TTAAAGAAGA ATGAATTCCA   3480
ATCCTACTCA AACTATTCTG AAAAATAGAG GAAAGAATAC TTCCAAACTC ATTCTACATG   3540
GCCAGTATTA CCCTGATTCC AAAACCAGAC AAAAACACAT CAAAAAACAAA CAAACAAAAA   3600
AACAGAAAGA AGAAAACTA CAGGCCAATA TCCCTGATGA ATACTGATAC AAAAATCCTC   3660
AACAAAACAC TAGCAAACCA AATTAAACAA CACCTTCGAA AGATCATTCA TTGTGATCAA   3720
GTGGGATTTA TTCCAGGGAT GGAAGGATGG TTCAACATAT GCAAATCAAT CAATGTGATA   3780
CATCATCCCA ACAAAATGAA GTACAAAAAC TATATGATTA TTTCACTTTA TGCAGAAAAA   3840
GCATTTGATA AAATTCTGCA CCCTTCATGA TAAAAACCCT CAAAAAACCA GGTATACAAG   3900
AAACATACAG GCCAGGCACA GTGGCTCACA CCTGCGATCC CAGCACTCTG GGAGGCCAAG   3960
GTGGGATGAT TGCTTGGGCC CAGGAGTTTG AGACTAGCCT GGGCAACAAA ATGAGACCTG   4020
GTCTACAAAA AACTTTTTA AAAAATTAGC CAGGCATGAT GGCATATGCC TGTAGTCCCA   4080
GCTAGTCTGG AGGCTGAGGT GGGAGAATCA CTTAAGCCTA GGAGGTCGAG GCTGCAGTGA   4140
GCCATGAACA TGTCACTGTA CTCCAGCCTA GACAACAGAA CAAGACCCCA CTGAATAAGA   4200
AGAAGGAGAA GGAGGAGGGA GAAAGGAGGA AGAAGGGAGG AGGAGGAGAA GGAGGAGGTG   4260
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GAGGAGAAGT GGAAGGGGAA GGGGAAGGGA AAGAGGAAGA AGAAGAAACA TATTTCAACA    4320

TAATAAAAGC CCTATATGAC AGACCGAGGT AGTATTATGA GGAAAAACTG AAAGCCTTTC    4380

CTCTAAGATC TGGAAAATGA CAAGGGCCCA CTTCACCAC TGTGATTCAA CATAGTACTA    4440

GAAGTCCTAG CTAGAGCAAT CAGATAAGAG AAAGAAATAA AAGGCATCCA AACTGGAAAG    4500

GAAGAAGTCA AATTATCCTG TTTGCAGATG ATATGATCTT ATATCTGGAA AAGACTTAAG    4560

ACACCACTAA AAAACTATTA GAGCTGAAAT TTGGTACAGC AGGATACAAA ATCAATGTAC    4620

AAAAATCAGT AGTATTTCTA TATTCCAACA GCAAACAATC TGAAAAAGAA ACCAAAAAAG    4680

CAGCTACAAA TAAAATTAAA CAGCTAGGAA TTAACCAAAG AAGTGAAAGA TCTCTACAAT    4740

GAAAACTATA AAATATTGAT AAAAGAAAAT GAAGAGGGCA CAAAAAAAGA AAAGATATTC    4800

CATGTTCATA GATTGGAAGA ATAAATACTG TTAAAAATGTC CATACTACCC AAAGCAATTT    4860

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CAATTCTAAG ATTTGTACAG AACCACAAAA GACCCAGAAT AGCCAAAGCT ATCCTGACCA    4980

AAAAGAACAA AACTGGAAGC ATCACATTAC CTGACTTCAA ATTATACTAC AAAGCTATAG    5040

TAACCCAAAC TACATGGTAC TGGCATAAAA ACAGATGAGA CATGGACCAG AGGAACAGAA    5100

TAGAGAATCC AGAAACAAAT CCATGCATCT ACAGTGAACT CATTTTTGAC AAAGGTGCCA    5160

AGAACATACT TTGGGGAAAA GATAATCTCT TCAATAAATG GTGCTGGAGG AACTGGATAT    5220

CCATATGCAA AATAACAATA CTAGAACTCT GTCTCTCACC ATATACAAAA GCAAATCAAA    5280

ATGGATGAAA GGCTTAAATC TAAAACCTCA AACTTTGCAA CTACTAAAAG AAAACACCGG    5340

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CAGAGAAATG CAAATCAAAA CTACTATGAG AGATCATCTC ACCCCAGTTA AAATGGCTTT 5760

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GGAATCAGTG TATCAACAAG CTATCTCCAC TCCCACATTT ACTGCAGCAC TGTTCATAGC 6000

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AACAGCATGG GGGGCACTGG TCAGTATGTT AAGTGAAATA AGCCAGGCAC AGAAAGACAA 6180

ACTTTTCATG TTCTCCCTTA CTTGTGGGAG CAAAAATTAA AACAATTGAC ATAGAAATAG 6240

AGGAGAAATGG TGGTTCTAGA GGGGTGGGGG ACAGGGTGAC TAGAGTCAAC AATAATTTAT 6300

TGTATGTTTT AAAATAACTA AAAGAGTATA ATTGGGTTGT TTGTAACACA AAGAAAGGAT 6360

AAATGCTTGA AGGTGACAGA TACCCCATTT ACCCTGATGT GATTATTACA CATTGTATGC 6420

CTGTATCAAA ATATCTCATG TATGCTATAG ATATAAACCC TACTATATTA AAAATTAAAA 6480

TTTTAATGGC CAGGCACGGT GGCTCATGTC CATAATCCCA GCACTTTGGG AGGCCGAGGC 6540

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TCTACTAAAG ATACAAAAAT TAGCCAGGCG TGGTGGCACA TACCTGTAGT CCCAACTACT    6660

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TAGAAGTTAA AAATTAAAAC AATTATAAAA GGTAATTAAC CACTTAATCT AAAATAAGAA    6900

CAATGTATGT GGGGTTCTA GCTTCTGAAG AAGTAAAAGT TATGGCCACG ATGGCAGAAA    6960

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AATCGAGCTG CAGAATTGGC ACGTCTGATC ACACCGTCCT CTCATTCACG GTGCTTTTT    7200

TCTTGTGTGC TTGGAGATTT TCGATTGTGT GTTCGTGTTT GGTTAAACTT AATCTGTATG    7260

AATCCTGAAA CGAAAAATGG TGGTGATTTC CTCCAGAAGA ATTAGAGTAC CTGGCAGGAA    7320

GCAGGTGGCT CTGTGGACCT GAGCCACTTC AATCTTCAAG GGTCTCTGGC CAAGACCCAG    7380

GTGCAAGGCA GAGGCCTGAT GACCCGAGGA CAGGAAAGCT CGGATGGGAA GGGGCGATGA    7440

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GCTCTGGATA CCATCTGGAA AAGGGGCCA GCGGGAATGC AAGGAGTCAG AAGCCTCCTG    7560

CTCAAACCCA GGCCAGCAGC TATGGCGCCC ACCGGGCGT GTGCCAGAGG GAGAGGAGTC    7620

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TCAAGGGAAA ACCAGACGCC CGCTCTGCGG TCATTTACCT CTTTCCTCTC TCCCTCTCTT   7800

GCCCTCGCGG TTTCTGATCG GGACAGAGTG ACCCCGGTGG AGCTTCTCCG AGCCCGTGCT   7860

GAGGACCCTC TTGCAAAGGG CTCCACAGAC CCCGCCCTG GAGAGAGGAG TCTGAGCCTG   7920

GCTTAATAAC AAACTGGGAT GTGGCTGGGG GCGGACAGCG ACGGCGGGAT TCAAAGACTT   7980

AATTCCATGA GTAAATTCAA CCTTCCACA TCCGAATGGA TTTGGATTTT ATCTTAATAT   8040

TTTCTTAAAT TTCATCAAAT AACATTCAGG AGTGCAGAAA TCCAAAGGCG TAAAACAGGA   8100

ACTGAGCTAT GTTGCCAAG GTCCAAGGAC TTAATAACCA TGTTCAGAGG GATTTTTCGC   8160

CCTAAGTACT TTTTATTGGT TTTCATAAGG TGGCTTAGGG TGCAAGGGAA AGTACACGAG   8220

GAGAGGACTG GGCGGCAGGG CTATGAGCAC GGCAAGGCCA CCGGGGAGAG AGTCCCCGGC   8280

CTGGGAGGCT GACAGCAGGA CCACTGACCG TCCTCCCTGG GAGCTGCCAC ATTGGGCAAC   8340

GCGAAGGCGG CCACGCTGCG TGTGACTCAG GACCCCATAC CGGCTTCCTG GGCCCACCCA   8400

CACTAACCCA GGAAGTCACG GAGCTCTGAA CCCGTGGAAA CGAACATGAC CCTTGCCTGC   8460

CTGCTTCCCT GGGTGGGTCA AGGGTAATGA AGTGGTGTGC AGGAAATGGC CATGTAAATT   8520

ACACGACTCT GCTGATGGGG ACCGTTCCTT CCATCATTAT TCATCTTCAC CCCCAAGGAC   8580

TGAATGATTC CAGCAACTTC TTCGGGTGTG ACAAGCCATG ACAACACTCA GTACAAAACAC   8640

CACTCTTTTA CTAGGCCCAC AGAGCACGGC CCACACCCT GATATATTAA GAGTCCAGGA   8700

GAGATGAGGC TGCTTTCAGC CACCAGGCTG GGGTGACAAC AGCGGGCTGAA CAGTCTGTTC   8760

CTCTAGACTA GTAGACCCTG GCAGGCACTC CCCCAGATTC TAGGGCCTGG TTGCTGCTTC   8820

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CCGAGGGGGC CATCTGCCCT GGAGACTCAG CCTGGGGTGC CACACTGAGG CCAGCCCTGT   8880
CTCCACACCC TCCGCCTCCA GGCCTCAGCT TCTCCAGCAG CTTCCTAAAC CCTGGGTGGG   8940
CCGTGTTCCA GCGCTACTGT CTCACCTGTC CCACTGTGTC TTGTCTCAGC GACGTAGCTC   9000
GCACGGTTCC TCCTCACATG GGGTGTCTGT CTCCTTCCCC AACACTCACA TGCGTTGAAG   9060
GGAGGAGATT CTGCGCCTCC CAGACTGGCT CCTCTGAGCC TGAACCTGGC TCGTGGCCCC   9120
CGATGCAGGT TCCTGCGGTC CGGCTGCACG CTGACCTCCA TTTCCAGGCG CTCCCCGTCT   9180
CCTGTCATCT GCCGGGGCCT GCCGGTGTGT TCTTCTGTTT CTGTGCTCCT TTCCACGTCC   9240
AGCTGCGTGT GTCTCTGTCC GCTAGGGTCT CGGGGTTTTT ATAGGCATAG GACGGGGGCG   9300
TGGTGGGCCA GGGCGCTCTT GGGAAATGCA ACATTTGGGT GTGAAAGTAG GAGTGCCTGT   9360
CCTCACCTAG GTCCACGGGC ACAGGCCTGG GGATGGAGCC CCCGCCAGGG ACCCGCCCTT   9420
CTCTGCCCAG CACTTTTCTG CCCCCTCCC TCTGGAACAC AGAGTGGCAG TTTCCACAAG   9480
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CCCTGGGAAT TCACGTGACT ACGCACATCA TGTACACACT CCCGTCCACG ACCGACCCCC   9600
GCTGTTTTAT TTTAATAGCT ACAAAGCAGG GAAATCCCTG CTAAAATGTC CTTTAACAAA   9660
CTGGTTAAAC AAACGGGTCC ATCCGCACGG TGGACAGTTC CTCACAGTGA AGAGGAACAT   9720
GCCGTTTATA AAGCCTGCAG GCATCTCAAG GGAATTACGC TGAGTCAAAA CTGCCACCTC   9780
CATGGGATAC GTACGCAACA TGCTCAAAAA GAAAGAATTT CACCCCATGG CAGGGGAGTG   9840
GTTGGGGGGT TAAGGACGGT GGGGGCAGCA GCTGGGGGCT ACTGCACGCA CCTTTTACTA   9900
AAGCCAGTTT CCTGGTTCTG ATGGTATTGG CTCAGTTATG GGAGACTAAC CATAGGGGAG   9960
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FIGURE 2
SEQUENCE LISTING SEQ ID NO:1
ATTORNEY DOCKET NO. 015389-004000US
Page 10 of 14

TGGGGATGGG GGAACCCGGA GGCTGTGTGCCA TCTTTGCCAT GCCCGAGTGT CCTGGGCAGG  10020

ATAATGCTCT AGAGATGCCC ACGTCCTGAT TCCCCCAAAC CTGTGGACAG AACCCGCCCG  10080

GCCCCAGGGC CTTTGCAGGT GTGATCTCCG TGAGGACCCT GAGGTCTGGG ATCCTTCGGG  10140

ACTACCTGCA GGCCCGAAAA GTAATCCAGG GGTTCTGGGA AGAGGCGGGC AGGAGGGTCA  10200

GAGGGGGGCA GCCTCAGGAC GATGGAGGCA GTCAGTCTGA GGCTGAAAAG GGAGGGAGGG  10260

CCTCGAGCCC AGGCCTGCAA GGGCCTCCAG AAGCTGGAAA AAGCGGGGAA GGGACCCTCC  10320

ACGGAGCCTG CAGCAGGAAG GCACGGGCTGG CCCTTAGCCC ACCAGGGCCC ATCGTGGACC  10380

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ATTTGCAGAA GCAAACAGGAA ACCCATGCAC TGTGAATCTA GGATTATTTC AAAACAAAGG  10500

TTTACAGAAA CATCCAAGGA CAGGGCTGAA GTGCCTCCGG GCAAGGGCAG GGCAGGCACG  10560

AGTGATTTTA TTTAGCTATT TTATTTTATT TACTTACTTT CTGAGACAGA GTTATGCTCT  10620

TGTTGCCCAG GCTGGAGTGC AGCGGCATGA TCTTGGCTCA CTGCAACCTC CGTCTCCTGG  10680

GTTCAAGCAA TTCTCGTGCC TCAGCCTCCC AAGTAGCTGG GATTTCAGGC GTGCACCACC  10740

ACACCCGGCT AATTTGTAT TTTAGTAGA GATGGGGTTT CACCATGTTG GTCAGGCTGA  10800

TCTCAAATC CTGACCTCAG GTGATCCGCC CACCTCAGCC TCCCAAAGTG CTGGGATTAC  10860

AGGCATGAGC CACTGCACCT GGCCTATTTA ACCATTTAA AACTTCCCTG GGCTCAAGTC  10920

ACACCCACTG GTAAGGAGTT CATGGAGTTC AATTCCCCT TTACTCAGGA GTTACCCTCC  10980

TTTGATATTT TCTGTAATTC TTCGTAGACT GGGGATACAC CGTCTCTTGA CATATTCACA  11040

GTTTCTGTGA CCACCTGTTA TCCCATGGGA CCCACTGCAG GGGCAGCTGG GAGGCTGCAG  11100

GCTTCAGGTC CCAGTGGGGT TGCCATCTGC CAGTAGAAAC CTGATGTAGA ATCAGGGCGC  11160

GAGTGTGGAC ACTGTCCTGA ATCTCAATGT CTCAGTGTGT GCTGAAACAT GTAGAAATTA  11220

AAGTCCATCC CTCCTACTCT ACTGGGATTG AGCCCCTTCC CTATCCCCCC CCAGGGGCAG  11280

AGGAGTTCCT CTCACTCCTG TGGAGGAAGG AATGATACTT TGTTATTTT CACTGCTGGT  11340

ACTGAATCCA CTGTTTCATT TGTTGGTTTG TTTGTTTGT TTTGAGAGGC GGTTTCACTC  11400

TTGTTGCTCA GGCTGGGAGGG AGTGCAATGG CGCGATCTTG GCTTACTGCA GCCTCTGCCT  11460

CCCAGGTTCA AGTGATTCTC CTGCTTCCGC CTCCCATTTG GCTGGGATTA CAGGCACCCG  11520

CCACCATGCC CAGCTAATTT TTTGTATTTT TAGTAGAGAC GGGGGTGGGG GTGGGGGTTCA  11580

CCATGTTGGC CAGGCTGGTC TCGAACTTCT GACCTCAGAT GATCCACCTG CCTCTGCCTC  11640

CTAAAGTGCT GGGATTACAG GTGTGAGCCA CCATGCCCAG CTCAGAATTT ACTCTGTTTA  11700

GAAACATCTG GGTCTGAGGT AGGAAGCTCA CCCCACTCAA GTGTTGTGGT GTTTTAAGCC  11760

AATGATAGAA TTTTTTTATT GTTGTTAGAA CACTCTTGAT GTTTTACACT GTGATGACTA  11820

AGACATCATC AGCTTTTCAA AGACACACTA ACTGCACCCA TAATACTGGG GTGTCTTCTG  11880

GGTATCAGCG ATCTTCATTG AATGCCGGGA GGCGTTTCCT CGCCATGCAC ATGGTGTTAA  11940

TTACTCCAGC ATAATCTTCT GCTTCCATTT CTTCTCTTCC CTCTTTTAAA ATTGTGTTTT  12000

CTATGTTGGC TTCTCTGCAG AGAACCAGTG TAAGCTACAA CTTAACTTTT GTTGGAACAA  12060

ATTTTCCAAA CCGCCCCTTT GCCCTAGTGG CAGAGACAAT TCACAAACAC AGCCCTTTAA  12120

AAAGGCTTAG GGATCACTAA GGGGATTTCT AGAAGAGCGA CCCGTAATCC TAAGTATTTA  12180

CAAGACGAGG CTAACCTCCA GCGAGCGTGA CAGCCCCAGGG AGGGTGCGAG GCCTGTTCAA  12240

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ATTTAAGGTT GCGTTTGTTA GCATTTCAGT GTTTGCCGAC CTCAGCTACA GCATCCCTGC  12360
AAGGCCTCGG GAGACCCAGA AGTTTCTCGC CCCTTAGATC CAAACTTGAG CAACCCGGAG  12420
TCTGGATTCC TGGGAAGTCC TCAGCTGTCC TGCGGTTGTG CCGGGGCCCC AGGTCTGGAG  12480
GGGACCCAGTG GCCGTGTGGC TTCTACTGCT GGGCTGGAAG TCGGGCCTCC TAGCTCTGCA  12540
GTCCGAGGCT TGGAGCCAGG TGCCTGGACC CCGAGGCTGC CCTCCACCCT GTGCGGGCGG  12600
GATGTGACCA GATGTTGGCC TCATCTGCCA GACAGAGTGC CGGGGCCCAG GGTCAAGGCC  12660
GTTGTGGCTG GTGTGAGGCG CCCGGTGCGC GGCCAGCAGG AGCGCCTGGC TCCATTTCCC  12720
ACCCTTTCTC GACGGGACCG CCCCGGTGGG TGATTAACAG ATTTGGGGTG GTTTGCTCAT  12780
GGTGGGGACC CCTCGCCGCC TGAGAACCTG CAAAGAGAAA TGACGGGCCT GTGTCAAGGA  12840
GCCCAAGTCG CGGGGAAGTG TTGCAGGGAG GCACTCCGGG AGGTCCCGCG TGCCCGTCCA  12900
GGGAGCAATG CGTCCTCGGG TTCGTCCCCA GCCGGGTCTA CGCGCCTCCG TCCTCCCCTT  12960
CACGTCCGGC ATTCGTGGTG CCCGGAGCCC GACGCCCCGC GTCCGGACCT GGAGGCAGCC  13020
CTGGGTCTCC GGATCAGGCC AGCGGCCAAA GGGTCGCCGC ACGCACCTGT TCCCAGGGCC  13080
TCCACATCAT GGCCCCTCCC TCGGGTTACC CCACAGCCTA GGCCGATTCG ACCTCTCTCC  13140
GCTGGGGCCC TCGCTGGCGT CCCTGCACCC TGGGAGGCGCG AGCGGCGCGC GGGGCGGGAA  13200
GCGCGGCCCA GACCCCCGGG TCCGCCCGGA GCAGCTGCGC TGTCGGGGCC AGGCCGGGCT  13260
CCCAGTGGAT TCGCGGGCAC AGACGCCCAG GACCGCGCTT CCCACGTGGC GGAGGGACTG  13320
GGGACCCCGGG CACCCGTCCT GCCCCTTCAC CTTCCAGCTC CGCCTCCTCC GCGCGGACCC  13380

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FIGURE 2
SEQUENCE LISTING SEQ ID NO:1
ATTORNEY DOCKET NO. 015389-004000US

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TCCTGCTGCG CACGTGGGAA GCCCTGCCCC CGGCCACCCC CGCGATGCCG CGCGCTCCCC  13560
GCTGCCGAGC CGTGCCGCTCC CTGCTGCGCA GCCACTACCG CGAGGTGCTG CCGCTGCCCA  13620
CGTTCGTGCG GCGCCTGGGG CCCCAGGGCT GGCGGCTGGT GCAGCGGCGGG GACCCGGCGG  13680
CTTTCCGCGC GCTGGTGGCC CAGTGCCTGG TGTGCGTGCC CTGGGACGCA CGGCCGCCCC  13740
CCGCCGCCCC CTCCTTCCGC CAGGTGGGCC TCCCCGGGGT CGGCGTCCGG CTGGGGTTGA  13800
GGGCGGCCGG GGGGAACCAG CGACATGCGG AGAGCAGCGC AGGCGACTCA GGGCGCTTCC  13860
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TGGGCAGGGG TCCTGGGCCC ACCCGGGCAG GACGCGGTGGA CCGAGTGACC GTGGTTTCTG  14460
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13

FIGURE 2
SEQUENCE LISTING SEQ ID NO:1
ATTORNEY DOCKET NO. 015389-004000US
Page 14 of 14

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GCGGCCACCA CGTCCCTGGG ACACGCCTTG TCCCCGGTG TACGCCGAGA CCAAGCACTT  14640

CCTCTACTCC TCAGGGACA AGGAGCAGCT GCGGCCCTCC TTCCTACTCA GCTCTCTGAG  14700

GCCCAGCCTG ACTGGCGCTC GGAGGCTCGT GGAGACCATC TTTCTGGGTT CCAGGCCCTG  14760

GATGCCAGGG ACTCCCCGCA GGTTGCCCCG CCTGCCCCAG CGCTACTGGC AAATGCGGCC  14820

CCTGTTTCTG GAGCTGCTTG GGAACCACGC GCAGTGCCCC TACGGGGTGC TCCTCAAGAC  14880

GCACTGCCCG CTGCGAGCTG CGGTCACCCC AGCAGCCGGT GTCTGTGCCC GGGAGAAGCC  14940

CCAGGGCTCT GTGGGCGGCCC CCGAGGAGGA GGACACAGAC CCCCGTCGCC TGGTGCAGCT  15000

GCTCCGCCAG CACAGCAGCC CCTGGCCAGGT GTACGCGCTTC GTGCGGGCCT GCCTGCGCCG  15060

GCTGGTGCCC CCAGGCCCTCT GGGGCTCCAG GCACAACGAA CGCCGCTTCC TCAGGAACAC  15120

CAAGAAGTTC ATCTCCCTGG GGAAGCATGC CAAGCTCTCG CTGCAGGAGC TGACGTGGAA  15180

GATGAGGGTG CGGGACTGCG CTTGGCTGCG CAGGAGCCCA GGTGAGGAGG TGGTGGCCGT  15240

CGAGGGCCCA GGCCCCAGAG CTGAAATGCAG TAGGGGCTCA GAAAAGGGGG CAGGCAGAGC  15300

CCTGGTCCTC CTGTCTCCAT CGTCACGTGG GCACACGTGG CTTTTCGCTC AGGACGTCGA  15360

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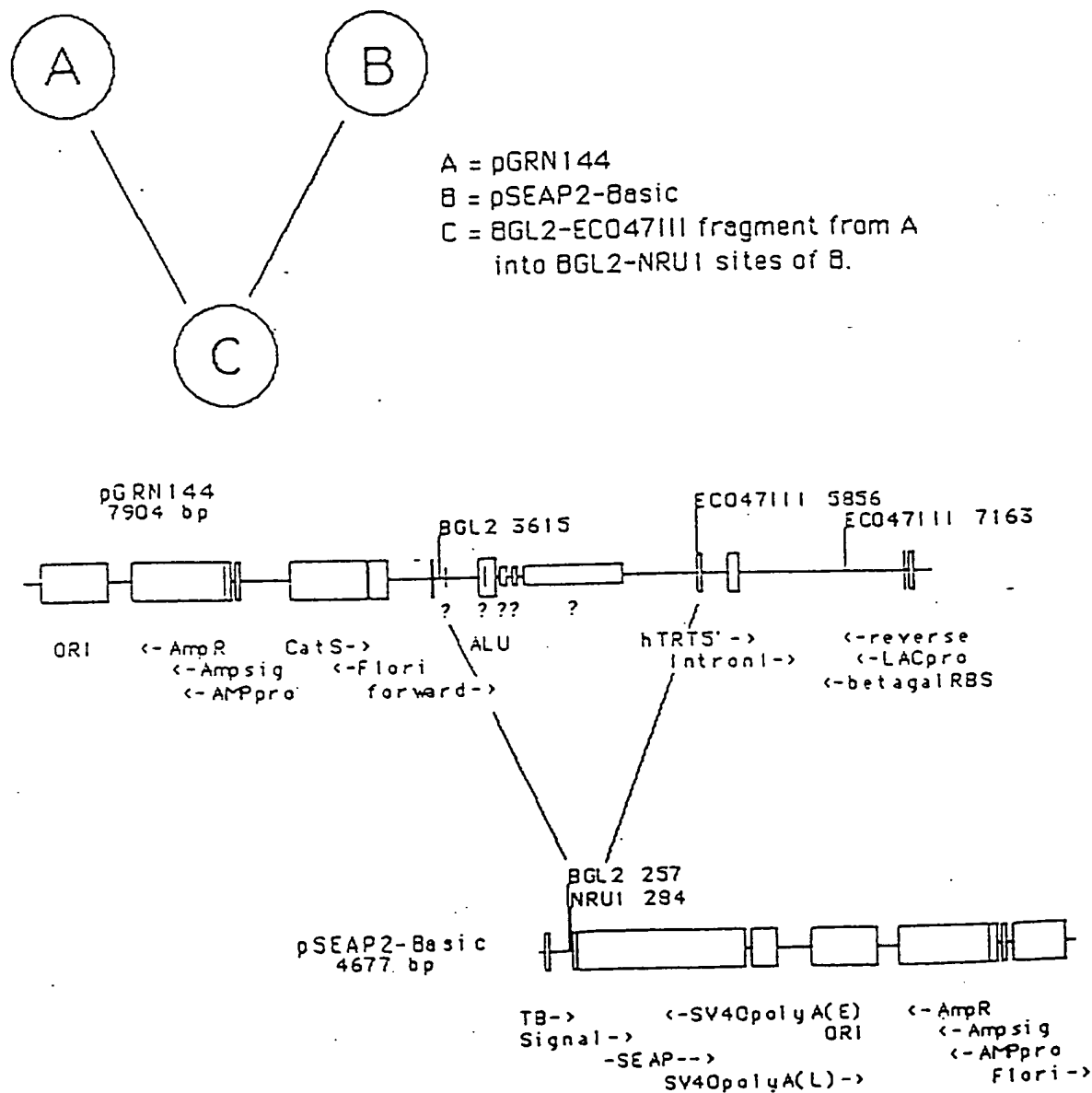
SF 195035 v1

# Promoter Reporter Construct
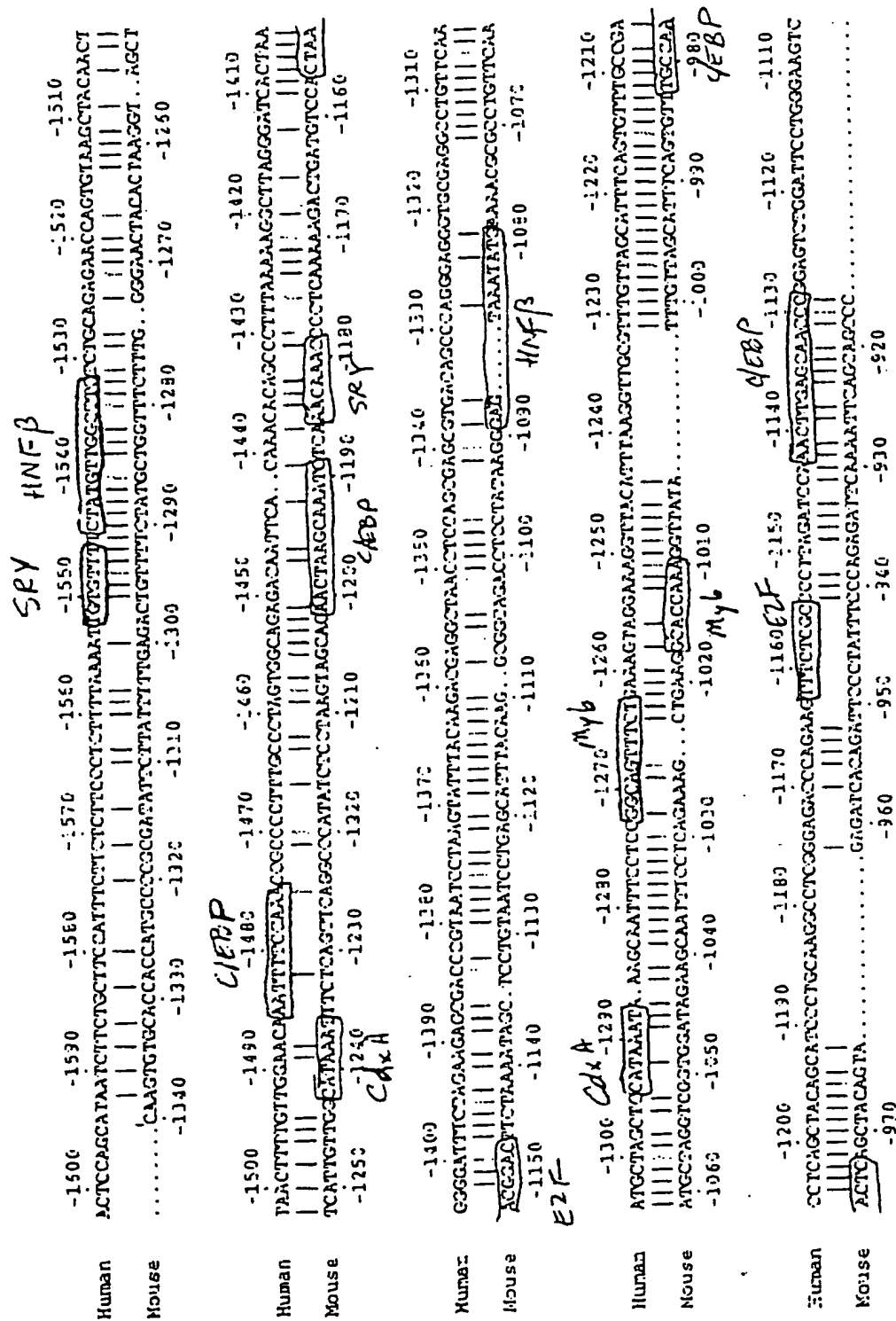
A = pGRN144

B = pSEAP2-Basic

C = BGL2-ECO47III fragment from A into BGL2-NRUI sites of B.



FIGURE 3

FIGURE 4A

FIGURE 4B

# FIGURE 5

```
LOCUS          B2.18          7498 bp     DNA
DEFINITION  Genomic sequence of the murine Telomerase reverse transcriptase
            gene promoter region.
GenBank ACCESSION NO:  B2.18 AF121949
BASE COUNT     1944 a   1857 c   1815 g   1882 t
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  61 cggtactgaa caaataatgt ctgggcaaac ctcagacatg aaaatggaag acgtggaaat

 121 ccagagaact ctgagggaaa ataaaacaca actccaggtc atcacgggac tcatcaaact

 181 gctgaggtgc agccacagag aaaaatctta aaatagccta gaacgatgca tgacacataa

 241 agcacagaga agacgaagct gagtctgtct tgtaggaaca acttgagaag acctaaacca

 301 ctgcaatgag tgcattctgc taacttagaa tttgctaccc agttcagatc caaaaagggt

 361 ttcacaaagt tcaacacaaa acagtagcag gagtggctaa gggggacaca ctgataggaa

 421 ttcagagaag tagggaatgc tcatatgggg acattacaaa atgtactttc atgttgctta

 481 aatcatttta attgtcaacc acatcaagct aaataatgct ttgaggttca taacatttgg

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1021 ctataagaga gcaggctgag caagccagga gaagcaagcc agtaaagaac atccctccat

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1201 tggtcatgat gtttgtgcag gaatagaaac cctgactaag acaatactat aaaccctaaa
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1381 ctcatctata tgtaagatta aagcctgttt gggctgcatg agactttgtt tcaaaaaaaa

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1801 ttctgaaggg tttcacagac accccatctt tccgagaaag gaccgcatag gctggccatc

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2461 ttccagtgat ctccaaacat ggcaagctac agcagagcag cagcccatc cagagccttg

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